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Job No.: CTCE/BBMP/W.No.08/KMG/WMM/Gradation/2014-15

11.08.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Mr. K.M. Giri**, Contractor, Bangalore.

Name of Work : Asphalting to roads and Improvements of drains in Dee Enclave Surroundings in Ward No.08 (Kodigehalli), BBMP, Bangalore.

Reference : AEE/KG/(WO)/43/2014-15 Dated: 08.08.2014

Date of Testing : 11.08.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): 25195

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	880	880	3.5	96.5	95-100
22.4	5920	6800	27.0	73.0	60-80
11.2	5630	12430	49.3	50.7	40-60
4.75	4050	16480	65.4	34.6	25-40
2.36	3825	20305	80.6	19.4	15-30
0.600	2195	22500	89.3	10.7	8-22
0.075	2410	24910	98.9	1.1	0-8

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Job No.: CTCE/BBMP/W.No.08/KMG/WMM/AIV/2014-15

11.08.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Mr. K.M. Giri,** Contractor, Bangalore.
Name of the Work	Asphalting to roads and Improvements of drains in Dee Enclave Surroundings in Ward No.08 (Kodigehalli), BBMP, Bangalore.
Reference	AEE/KG/(WO)/43/2014-15 Dated: 08.08.2014
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	11.08.2014

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	382	383	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	81	82	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	301	301	
4	Aggregate Impact value = percent fines	21.20	21.41	21.31
	100* (W_2/W_1)%			

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.08/KMG/WMM/S-T/2014-15

11.08.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Mr. K.M. Giri,** Contractor, Bangalore.
Name of Work	Asphalting to roads and Improvements of drains in Dee Enclave Surroundings in Ward No.08 (Kodigehalli), BBMP, Bangalore.
Reference	AEE/KG/(WO)/43/2014-15 Dated: 08.08.2014
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	11.08.2014

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Result : Flakiness Index = **11.06%**

Elongation Index = **13.58%**

Result : Combined Flakiness & Elongation index **24.64%**

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.08/KMG/SDBC/AIV/2014-15

18.08.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Mr. K.M. Giri,** Contractor, Bangalore.
Name of the Work	Asphalting to roads and Improvements of drains in Dee Enclave Surroundings in Ward No.08 (Kodigehalli), BBMP, Bangalore.
Reference	AEE/KG/(WO)/43/2014-15 Dated: 08.08.2014
Source / Location	Hot Mix Plant, Bangalore
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	18.08.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	378	380	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	78	79	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	300	301	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	20.63	20.79	20.7

Comments:

→ Maximum allowable Aggregate Impact value for Semi Dense Bituminous Concrete is 27%

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Job No.: CTCE/BBMP/W.No.08/KMG/SDBC/Shape_T/2014-15 : 18.08.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	: **Mr. K.M. Giri,** Contractor, Bangalore.
Name of Work	: Asphalting to roads and Improvements of drains in Dee Enclave Surroundings in Ward No.08 (Kodigehalli), BBMP, Bangalore.
Reference	: AEE/KG/(WO)/43/2014-15 Dated: 08.08.2014
Technical Reference	: IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	: Semi Dense Bituminous Concrete
Date of Testing	: 18.08.2014

Civil-Tech Consultants & Engineers Bangalore

Result : Flakiness Index = **11.36%**

Elongation Index = **13.25%**

Result : Combined Flakiness & Elongation index **24.61%**

Comments:

Maximum allowable Flakiness & Elongation Index for Semi Dense Bituminous Concrete is 30%

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Job No.: CTCE/BBMP/W.No.08/KMG/SDBC/Stripping/2014-15

18.08.2014

Stripping Value of Road Aggregates (Static Immersion Test)

IS: 6241

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Mr. K.M. Giri,** Contractor, Bangalore.
Name of the work	Asphalting to roads and Improvements of drains in Dee Enclave Surroundings in Ward No.08 (Kodigehalli), BBMP, Bangalore.
Reference	AEE/KG/(WO)/43/2014-15 Dated: 08.08.2014
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	18.08.2014

Type of binder : 80/100

Percentage of binder used : 5.0% by wt.

Total weight of aggregate : 200 g

Total weight of binder : 10.0 g

Temperature of water-bath : 40° C

Observation Number	Stripping, Percentage	Average, Percentage	Average Retained Coating, %
1	3.1	3.20	96.80
2	3.2		
3	3.3		

Comments:

→ Minimum allowable Aggregate retained coating for Semi Dense Bituminous Concrete is 9

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Job No.: CTCE/BBMP/W.No.08/KMG/SDBC/Sp_Wa/2014-15

18.08.2014

Specific Gravity And Water Absorption Test

IS: 2386 Part III

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Mr. K.M. Giri,** Contractor, Bangalore.
Name of the Work	Asphalting to roads and Improvements of drains in Dee Enclave Surroundings in Ward No.08 (Kodigehalli), BBMP, Bangalore.
Reference	AEE/KG/(WO)/43/2014-15 Dated: 08.08.2014
Type of Mix	Semi Dense Bituminous Concrete
Source / Location	Hotmix Plant, Bangalore
Date of Testing	18.08.2014

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2022	2023	2024	
2	Weight of basket suspended in water	W_2 g	755	755	755	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1267	1268	1269	
4	Weight of saturated surface dry aggregate in air	W_3 g	2015	2016	2017	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	748	748	748	
6	Weight of oven dried aggregate	W_4 g	1999	2000	1995	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.672	2.674	2.667	2.671
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.731	2.732	2.748	2.737
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.80%	0.80%	1.10%	0.90%

Comments:

→ Maximum allowable Aggregate Water absorption value for Semi Dense Bituminous Concrete is 2.0%

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